WHAT IS CLAIMED IS:

1. A method of manufacturing a semiconductor device, comprising:

forming an underlying region including an interlevel insulating film on a semiconductor substrate;

forming an alumina film on the underlying region;

forming a hole in the alumina film;

filling the hole with a bottom electrode film;

forming a dielectric film on the bottom electrode film; and

forming a top electrode film on the dielectric film.

2. The method according to claim 1, wherein forming the dielectric film comprises:

forming another alumina film on the bottom electrode film;

forming another hole reaching the bottom electrode film in said another alumina film; and

filling said another hole with the dielectric film.

3. The method according to claim 1, wherein forming the underlying region comprises forming a plug to be connected to the bottom electrode film in the interlevel insulating film.

4. The method according to claim 1, wherein filling the hole is performed using a CMP process.

5. The method according to claim 1, wherein the dielectric film is a metal oxide film.

6. A method of manufacturing a semiconductor device, comprising:

forming an underlying region including an interlevel insulating film on a semiconductor substrate;

forming a bottom electrode film on the underlying region;

forming an alumina film on the bottom electrode film;

forming a hole reaching the bottom electrode film in the alumina film;

filling the hole with a dielectric film; and

forming a top electrode film on the dielectric film.

7. The method according to claim 6, wherein forming the underlying region comprises forming a plug to be connected to the bottom electrode film in the interlevel insulating film.

8. The method according to claim 6, wherein filling the hole is performed using a CMP process.

9. The method according to claim 6, wherein the dielectric film is a metal oxide film.

10. A method of manufacturing a semiconductor device, comprising:

forming an underlying region including an

interlevel insulating film on a semiconductor substrate;

forming an alumina film on the underlying region;

forming a hole in the alumina film;

filling the hole with a conductive film to form a plug;

forming a bottom electrode film on the plug;

forming a dielectric film on the bottom electrode film; and

forming a top electrode film on the dielectric film.

11. The method according to claim 10, wherein forming the hole in the alumina film comprises forming the hole in the alumina film and the interlevel insulating film.

12. The method according to claim 10, wherein filling the hole is performed using a CMP process.

13. The method according to claim 10, wherein the dielectric film is a metal oxide film.

14. A method of manufacturing a semiconductor device, comprising:

forming an underlying region including an interlevel insulating film on a semiconductor substrate;

forming a bottom electrode film pattern on the underlying region;

covering upper and side surfaces of the bottom

electrode film pattern with an alumina film;

removing a part of the alumina film to expose the upper surface of the bottom electrode film pattern and to leave a part of the alumina film, which is formed on the side surface of the bottom electrode film pattern;

forming a dielectric film on the exposed upper surface of the bottom electrode film pattern; and

forming a top electrode film on the dielectric film.

15. The method according to claim 14, wherein forming the dielectric film comprises:

forming a dielectric film pattern on the bottom electrode film pattern;

covering upper and side surfaces of the dielectric film pattern with another alumina film; and

removing a part of said another alumina film to expose the upper surface of the dielectric film pattern and to leave a part of said another alumina film, which is formed on the side surface of the dielectric film pattern.

16. The method according to claim 14, wherein removing the part of the alumina film is performed using a CMP process.

17. The method according to claim 14, wherein the dielectric film is a metal oxide film.

18. A method of manufacturing a semiconductor device, comprising:

forming an underlying region including an interlevel insulating film on a semiconductor substrate;

forming a bottom electrode film on the underlying region;

forming a dielectric film pattern on the bottom electrode film;

covering upper and side surfaces of the dielectric film pattern with an alumina film;

removing a part of the alumina film to expose the upper surface of the dielectric film pattern and to leave a part of the alumina film, which is formed on the side surface of the dielectric film pattern; and

forming a top electrode film on the exposed upper surface of the dielectric film pattern.

19. The method according to claim 18, wherein removing the part of the alumina film is performed using a CMP process.

20. The method according to claim 18, wherein the dielectric film is a metal oxide film.